

# United States Patent [19]

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[11] Patent Number: 4,990,343

[45] Date of Patent: Feb. 5, 1991

[54] ENZYME PRODUCT AND METHOD OF IMPROVING THE PROPERTIES OF DOUGH AND THE QUALITY OF BREAD

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[21] Appl. No.: 341,389

[22] Filed: Apr. 21, 1989

[30] Foreign Application Priority Data

Apr. 22, 1988 [FI] Finland ..... 881905  
Jan. 3, 1989 [FI] Finland ..... 890021

[51] Int. Cl.<sup>5</sup> ..... A21D 8/04

[52] U.S. Cl. .... 426/10; 426/28;  
426/20; 426/61

[58] Field of Search ..... 426/10, 20, 28, 61

[56] References Cited

## U.S. PATENT DOCUMENTS

2,783,150 2/1957 Luther ..... 426/61  
3,512,992 5/1970 Cooke et al. .... 426/20  
4,803,084 2/1989 Shine ..... 426/20

## FOREIGN PATENT DOCUMENTS

0132289 1/1985 European Pat. Off. .

1216556 12/1970 United Kingdom .

## OTHER PUBLICATIONS

Vol. 71, Chemical Abstracts, No. 11, 11/24/67, No. 100606K.

Vol. 71, Chemical Abstracts, No. 11, 11/24/67, No. 100606M.

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[57] ABSTRACT

The invention relates to a method of improving the properties of dough and the quality of bread by adding to the dough, dough ingredients, ingredient mixture or dough additives or additive mixture an enzyme preparation comprising hemicellulose and/or cellulose degrading enzymes and glucose oxidase, or sulphhydryl oxidase and glucose oxidase, the enzyme preparation being preferably used in combination with lecithin. The enzyme preparation of the invention has an advantageous effect on the processability of the dough and the properties of the final bakery product. The combination of the enzyme preparation of the invention and lecithin can advantageously replace bromate conventionally used as a baking additive.

20 Claims, No Drawings